



Combat Training Center Objective Instrumentation System (CTC-OIS)

OIS Technical Strategy

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Agenda



- Shortcomings
- Key Goals
- Key ORD Requirements
- Common/Unique Requirements
- What is the OIS Product?
- System Engineering Considerations
- Challenges



Shortcomings of Present System



Does not support:

- Digital data capture from ABCS.
- Automated capability to collect, update, and analyze training performance data in real time.
- Electromagnetic spectrum management and engineering.
- "Objective" assessment of battle outcomes.
- Existing and emerging weapon systems.
- System Enhancement.



Shortcomings of Present System (Cont.)



- System Pieced together over 16 years
- Rapid pace of new systems integration (Digitized Army)
- Configuration Management extremely poor.
- O&M Costs out of control
- Too much equipment is downrange or on mountain tops
- Accessibility to system utilization for testing purposes limited.
- Difficult and slow to troubleshoot, identify, and fix problems.
- Single point failures are becoming more of a problem.
- Threat of losing much of our SPECTRUM near term.



KEY GOALS



- Support User Requirements and the CTC/HITS Training Experience.
 - Support Digitized Force...& the Remainder.
 - Support Weapon Systems.
 - Support TESS....Future & Legacy.
 - Support Live, Virtual, and Constructive Integration.
 - Support TADSS....Future & Legacy.



KEY GOALS



- Reduce Army Resources needed for Operations & Maintenance of System.
 - -Maintenance.
 - Operations.
 - -Observer/Controllers.
 - Upgrade Costs.



Key ORD Requirements



- Spectrum Management
- Collect, Manage, and Analyze Digital Traffic
- Observer/Controller Situational Awareness
- Interface with and Integrate TESS



Spectrum Management



- Current IS' not Spectrally Efficient.
- One communication system needed.
 - -Wireless digital data, voice, and video.
 - Integrated w/ WAN/LAN.



Collect, Manage, and Analyze Digital Traffic



- Learn from ABCSI
- Monitor DCX & JCF
- Must support Digitized Force



Observer/Controller Situational Awareness



- Support "Objectivity"
- O/C Tools
- Instrumentation Link to the O/C



Interface with & Integrate TESS



- Prime Contractor must understand TESS
- Integrate TESS into the OIS
- Legacy TESS
- One-TESS?



Common Requirements



- All Systems will have many common requirements based on similar functions of the OIS'
 - Exercise Planning
 - System Preparation
 - Exercise Management
 - Training Performance Feedback
 - System Support



Unique Requirements/Anomalies



- Increased Video Stream of Data
- Specific Site Missions
- Infrastructure/System Capabilities at Different Sites
- MOUT



What is the OIS Product?



- CTIA-Technical tool from which configurations will be built. CTIA is NOT the product
- Computer S/W
- Computer H/W
- Communication System(s)-Common & site specific.



System Engineering Considerations



- CTIA
- Simulation Based Acquisition
- Domain Modeling
- Seamless Transition from Current IS to OIS
- CTC-OIS Technologies
- COTS-Based System



Common Training Instrumentation Architecture



- Standards and Guidelines
- COTS/GOTS
- Common HW/SW
- Components
- Configurations



Simulation-Based Acquisition



Functional Model

Resource Model

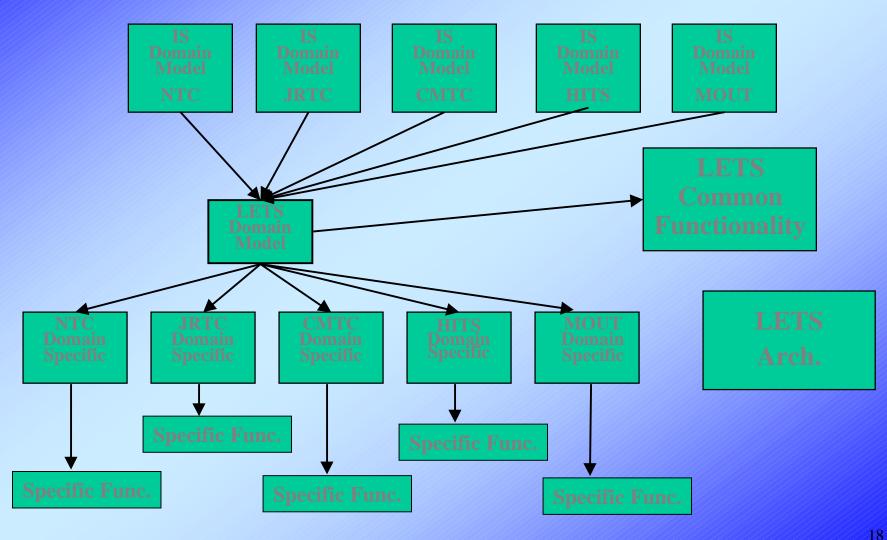
Performance Model

Simulation Integrated Laboratory



DOMAIN MODELING







Seamless Transition from Current IS to OIS



- Installed, tested, and tentatively accepted prior to active use
- OIS run in parallel with existing IS
- OIS not to interfere with Training Rotations
- Challenges
 - Housing the OIS
 - Personnel to run the OIS



CTC Technologies



- Communications
- TESS
- Integration of Legacy and Emerging Systems
- Capture and Analysis of Digital Data



COTS Based System



- Market Research indicates availability of Commercial and Non-developmental items
- OISa Modified Commercial Item
- Cost/Performance Tradeoffs
- Use of CAIV



Challenges



Think out of the box

Understand the Problem and the Government's Position